



# Ocean Winds

## OVERVIEW

NASA's Quick Scatterometer (QuikSCAT) spacecraft was launched from Vandenberg Air Force Base, California on June 19, 1999. QuikSCAT carries the SeaWinds scatterometer, a specialized microwave radar that measures near-surface wind speed and direction under all weather and cloud conditions over the Earth's oceans.

Data from the SeaWinds on QuikSCAT has proved to be an invaluable aid to weather forecasters in predicting the location and intensity of storms and hurricanes. QuikSCAT enabled the identification and monitoring of hurricane level extra-tropical cyclones, which constitute a major hazard to shipping and maritime travel. The magnitude and frequency of these events had been completely unknown and unexpected prior to the advent



of QuikSCAT. The QuikSCAT data have also shed new light on how winds interact with the ocean circulation, transferring energy and gases from the atmosphere into the oceans, which are key players in the Earth's climate. QuikSCAT has been an invaluable source for monitoring and understanding the dramatic change in the Arctic sea-ice cover that has occurred within the last decade.



## FACTS

- QuikSCAT acquires all-weather, high-resolution measurements of near-surface winds over global oceans.
- Determines atmospheric forcing, ocean response, and air-sea interaction mechanisms on various spatial and temporal scales.
- Provides wind data, which when combined with measurements from scientific instruments in other disciplines, helps scientists better understand the mechanisms of global climate change and weather patterns.
- Provides data on annual and semi-annual rain forest vegetation changes, daily to seasonal sea ice edge movement, and Arctic/Antarctic ice pack changes.
- Helps determine the location, direction, structure and strength of storms at sea. Severe marine storms hurricanes near the Americas, typhoons in Asian waters, and mid-latitude cyclones worldwide are among the most destructive of all natural phenomena.
- Aids ship masters in choosing routes that avoid heavy seas or high headwinds that may slow ships' progress, increase fuel consumption, or possibly cause damage to vessels and loss of life.

